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CLAIMS

1. Modular instrumentation system for aircraft comprising: four antennas (A1-A4) connected to four GPS receivers (GPS1-GPS4) that provide in output the attitude data and the angular velocities; a data acquisition card (S, C) that receives, memorizes and processes said attitude data and said angular velocities coming from said data acquisition card (S, C) and provides data relating to the board instruments of an aircraft; visualization means (V) of said data relating to the board instruments.

2. Modular instrumentation system for aircraft in accordance with claim 1 characterized in that data acquisition card (S, C) carries out a series of measurements from which the statistic information is taken, that is it calculates the average values of said attitude data and of said angular velocities.

3. Modular instrumentation system for aircraft in accordance with claim 1 characterized in that said board instruments comprise at least one of the following instruments: artificial horizon, altimeter, turn and bank indicator, roll and pitch, variometer, anemometer, directional gyrocompass, G-Metro.

4. Modular instrumentation system for aircraft in accordance with claim 1 characterized in that it comprises a computer (C) that processes the said attitude data and said angular velocities coming from said data acquisition card (S) and supplies data relating to the board instruments of an aircraft.

5. Modular instrumentation system for aircraft in accordance with claim 1 characterized in that it comprises a recorder (R) suited to recording the attitude data, the position of an aircraft and the date and the recording time, at regular intervals.

6. Modular instrumentation system for aircraft in accordance with claim 1 characterized in that it comprises a mobile telephone (T), a memory suited to memorizing the data received from the data acquisition card and an

acceleration sensor (ACC) suited to activating said mobile telephone (T) and transmitting said data.

5 7. Modular instrumentation system for aircraft in accordance with claim 1 characterized in that it comprises a position sensor of the motor throttle (SENS1) and a fuel level indicator sensor (SENS2).

8. Modular instrumentation system for aircraft in accordance with claim 7 characterized in that it comprises position sensors of the mobile surfaces (SESM) and actuators of the mobile surfaces (ATSM).

10 9. Modular instrumentation system for aircraft in accordance with claim 1 characterized in that said data acquisition card (S) processes said attitude data and said angular velocities, integrates them with the data relating to a digital map and transmits them to a said visualization means (V).

15 10. Method for determining the parameters relating to the instrumentation for aircraft comprising the following phases: receiving a series of attitude data and the angular velocities from four GPS receivers (GPS1-GPS4); calculating the average values of said attitude data and of said angular velocities; memorizing said data; processing said attitude data and said angular velocities; supplying data relating to the board instruments
20 of an aircraft; visualizing said board instruments of an aircraft.

11. Method in accordance with claim 10 characterized in that it introduces a geometric inequality to reduce the research space of the measurement of the phase difference, utilizes a group loss function to select the solution; controls the solution by means of an integrity control on the
25 covariant matrix of the errors.

12. Method in accordance with claim 10 characterized in that it uses an extended Kalman filter for the non-linear systems to eliminate the errors caused by multipaths.